14.0 BUILDING 3125: BEAVER CREEK AIR TERMINAL BUILDING

14.1 Description of Existing Water Supply System

Building 3125, the Beaver Creek Airport Terminal Building, is currently served by a water system that sources water from a well of unknown depth. The well is located in a pit approximately 2 m east of the terminal building. The well location and other details about the surrounding area are provided in Figure 3125-A in Appendix A14. The coordinates of the wellhead, as measured by a handheld GPS device, were recorded as:

- UTM ZONE 7
- Northing: 6919562
- Easting: 507085

There is no treatment or disinfection system for the water supplying this building. A schematic detailing the well water supply system is provided as Figure 3440-B in Appendix A14.

14.2 Description of Existing Wastewater Systems

A septic tank that serves the terminal building is located on the east side of the building approximately 5 m north of the tank. Effluent is discharged to an in ground sewage disposal system approximately 54 m northwest of the well. Conceptual hydrogeology for the area indicates that the effluent disposal field is likely downgradient from the well. A site plan showing the septic system is given by Figure 3125-A in Appendix A14.

14.3 Water Quality Results

14.3.1 Water Quality Results from Previous Sampling

Bacteriological

Nine samples were collected from the Beaver Creek Airport Terminal Building water system between September 2004 and June 2005 and were tested for total coliform and *E. coli* by Yukon Environmental Health Services using the presence/absence test method. Results are tabulated in Table 3125-1 in Appendix A14. *E. coli* bacteria were reported as absent in each of the nine samples for which results are provided, but one sample, taken November 17, 2004, tested positive for total coliform bacteria. More recent samples have not had Total coliform bacteria present.

Potability

Water samples were previously collected from the Beaver Creek Airport Terminal Building water system on September 21, 2004 and June 15, 2005. The samples were submitted to Northwest Labs in Surrey, BC and ALS Environmental in Vancouver, BC for analyses included in their drinking water packages. The results of these analyses are summarized in Table 3125-2 in Appendix A14. EBA reviewed the analytical results to compare them with the Canadian Drinking Water Quality Guidelines (CDWQG) to observe general water quality, identify and recommend additional sampling and analytical, and to identify potential indicators of contamination.

- The turbidity was 4.1 NTU during the first sampling event and 3.29 NTU during the second sampling event. In both cases the turbidity was in exceedence of the CDWQG MAC of 1.0 NTU;
- Review of the water quality results indicated that all other health based and aesthetic objectives were met for the parameters analyzed;
- Review of the water quality results indicated that the groundwater is a calcium magnesium bi-carbonate sulphate type water; and,
- The hardness (as $CaCO_3$) was 137 mg/L during the first sampling event and 126 mg/L during the second sampling event, and is considered to be moderately hard.

14.3.2 Identification of Additional Analytical Testing Required

Additional analytical for the Beaver Creek Airport Terminal Building that was identified to be included during the water system assessments is detailed below:

- As turbidity was previously in exceedence of the CDWQG MAC, a sample was taken to re-test for turbidity;
- UV absorbance and UV transmissivity, as well as tannins and lignin, to determine potential for UV treatment as a disinfection option for this water system;
- Total organic carbon (TOC);
- EPH to determine if there are any signs of hydrocarbon contamination; and,
- Measurements in the field for total dissolved solids, conductivity, pH, and temperature.

Additional Analytical Results

A water sample obtained during the water system assessment on July 27, 2005 was submitted to ALS Environmental in Vancouver, BC for analysis. These results are summarized in Table 3125-2 in Appendix A14 and the laboratory reports are included in Appendix B.

- At 11.7 NTU, turbidity was in exceedence of the CDWQG MAC of 1.0 NTU;
- Concentrations of extractable petroleum hydrocarbons (EPH) were below analytical detection; and,
- All other health based and aesthetic objectives were met for the parameters analyzed.

14.3.3 Indicators of Potential Contamination

Chloride, nitrate and nitrite concentrations can indicate impacts from surfacewater sources or septic waste. Chloride concentrations were reported to be low and can be considered to be within the normal background ranges for groundwater in the area. Nitrate and nitrite concentrations for this sample were also low and within the normal background range for this area. These water quality results do not suggest that the aquifer from which the groundwater is obtained for the airport building is under the influence of surfacewater sources or septic wastes.

14.4 Conceptual Hydrogeology

There was no driller's well log available for review for this well. Most of the wells in the Beaver Creek area indicate coarse sand and gravel with cobbles and small boulders to depths of at least 30 m. The well logs also indicate that discontinuous lenses of finer-grained sediments persist throughout the area, but in general the sediments are dominated by coarse alluvium. Some discontinuous permafrost is also interpreted to persist throughout the Beaver Creek area. The variability of sediments in the Beaver Creek area indicates limited aquifer protection from surficial sources of contamination. A study had been previously completed in the Beaver Creek area by EBA, and it was determined that the direction of groundwater flow is north to northeasterly.

14.5 Potential Contaminant Sources

Potential contaminant sources from observations during the assessment are compiled in field notes in Appendix A14. Photos of potential contaminant sources are also provided in Appendix A14.

Potential contaminant sources within 30 m of the wellhead are:

- An above ground fuel storage tank (AST) at 5 m;
- Oil drums;
- Aircraft parking area;
- Vehicle parking area;
- Jet fuel storage area; and,
- Septic tanks located approximately 5 m from the well.

Additionally, septic discharge lines that run between the tank and the field are located within 10 m of the well and the septic field is approximately 54 m from the well.

14.5.1 Spills Records and Contaminated Sites Search Results

The Government of Yukon Environmental Programs Branch identified that on April 30, 2004, 3 L to 5 L of diesel fuel spilled on the south side of the terminal building when a tank overfilled. It is considered unlikely that this impacted on the groundwater quality at the site. No other spill records or contaminated sites issues were identified for this site.

14.6 Identified Water System Deficiencies and Associated Risk

14.6.1 High and Medium Risk Deficiencies

- Poor surface completion of the wellhead (located in a pit below grade);
- There is no surface sanitary seal (grout or bentonite seal as required by the Canadian Groundwater Association's Guidelines for Water Well Construction;
- By definition of the Draft Yukon GUDI Assessment Guideline, the well is potentially under the direct influence of surface water because it does not meet the requirements of the Guidelines for Water Well Construction;
- The well is located within 30 m of potential contaminant sources, including an above ground fuel storage at 5 m, aircraft and vehicle parking within 10 m, and oil and aviation fuel drum storage within 30 m;
- Although the septic field is located greater than 30 m likely downgradient from the well, the septic tank is located 5 m from the well which contravenes the proposed

Part III Small Public Drinking Water Guideline, and the existing Yukon Public Sewage Regulation which requires a 15 m setback;
- Total coliform bacteria were reported as present in one previous sampling event;
- Three independent sampling events reported turbidity to be above the CDWQG MAC. The most recent sampling event reported turbidity to be 11.7 NTU; and,
- There is no treatment or disinfection system present.

14.6.2 Low Risk Deficiencies

- There are no low-risk deficiencies associated with this site. All deficiencies are either high or medium risk.

14.7 Mitigative Options for Deficiencies

Mitigative options were developed to address the deficiencies identified in the previous section. Deficiencies are categorized by recommended level of priority (with Priority 1 being most critical).

14.7.1 Priority 1

Recommended Priority 1 upgrades to mitigate immediate risk to the Beaver Creek Airport water system are summarized below:
- Confirm depth of well;
- Superchlorinate well and water system;
- Install chlorine tap at wellhead for future disinfection;
- Install an appropriately sized filtration (to 1 micron absolute) and NSF/ANSI 55 certified UV disinfection system. Based on water quality data it appears that pretreatment to ensure proper UV operation will not be required. These are conceptual design recommendations based on the information available for planning and budgeting purposes. Engineering input will be required for final system specifications.

14.7.2 Priority 2

Two potential options to mitigate potential long-term risk to the Beaver Creek Airport water system are presented below:

Option 1: Upgrade and Rehabilitate Well, Relocate Potential Contaminant Sources

The option of upgrading, rehabilitating and relocating potential contaminant sources is presented below:

- Camera well to determine well construction and condition;
- Chemically clean (pending camera investigation results);
- Standard wellhead upgrades consisting of a pitless unit installation, extending the casing to at least 500 mm above grade, and retrofitting of a surface sanitary seal (grout or bentonite to at least 3 m in depth);
- Relocate AST; and,
- Relocate septic tank.

Option 2: Construct New Well to Serve Airport Facility

This second option proposes that a new well be drilled to serve the airport, and that the existing well be properly decommissioned. It is recommended that the new well be installed to meet the following conditions:

- The well should be equipped with a surface seal to at least 6 m and the casing should be extended above grade (500 mm) within a lockable enclosure that is not inaccessible to animals and unauthorized personnel;
- The well must be located at a distance greater than 30 m from any potential source of contamination, including the above ground storage tanks and all parts of the septic system;
- The water from the new well must meet all CDWQG health based guidelines. If there are any exceedences in the CDWQG health-based guidelines then a treatment system must be designed and installed as necessary.

14.8 Cost Estimates for Mitigative Options

Engineering costs for mitigative options are estimated to be 20% of construction costs, and would include inspection and completion reporting. The costs for materials and labour (not including engineering) are provided in the sections below. An additional contingency allowance of 20% is suggested for budgetary purposes.

14.8.1 Priority 1

Priority 1 costs are summarized below:

- The estimated cost for labour to superchlorinate the well and water system is approximately **$200**;
- Installation of a chlorine tap at wellhead for future disinfection would cost approximately **$200**;

- It is estimated that the installation of an appropriately sized NSF 61 filtration system (to 1 micron absolute) and an NSF/ANSI 55 certified UV disinfection system would cost **$3,000.**

14.8.2 Priority 2

Priority 2 costs for each option presented above are as follows:

Option 1: Upgrade and Rehabilitate Well, Relocate Potential Contaminant Sources

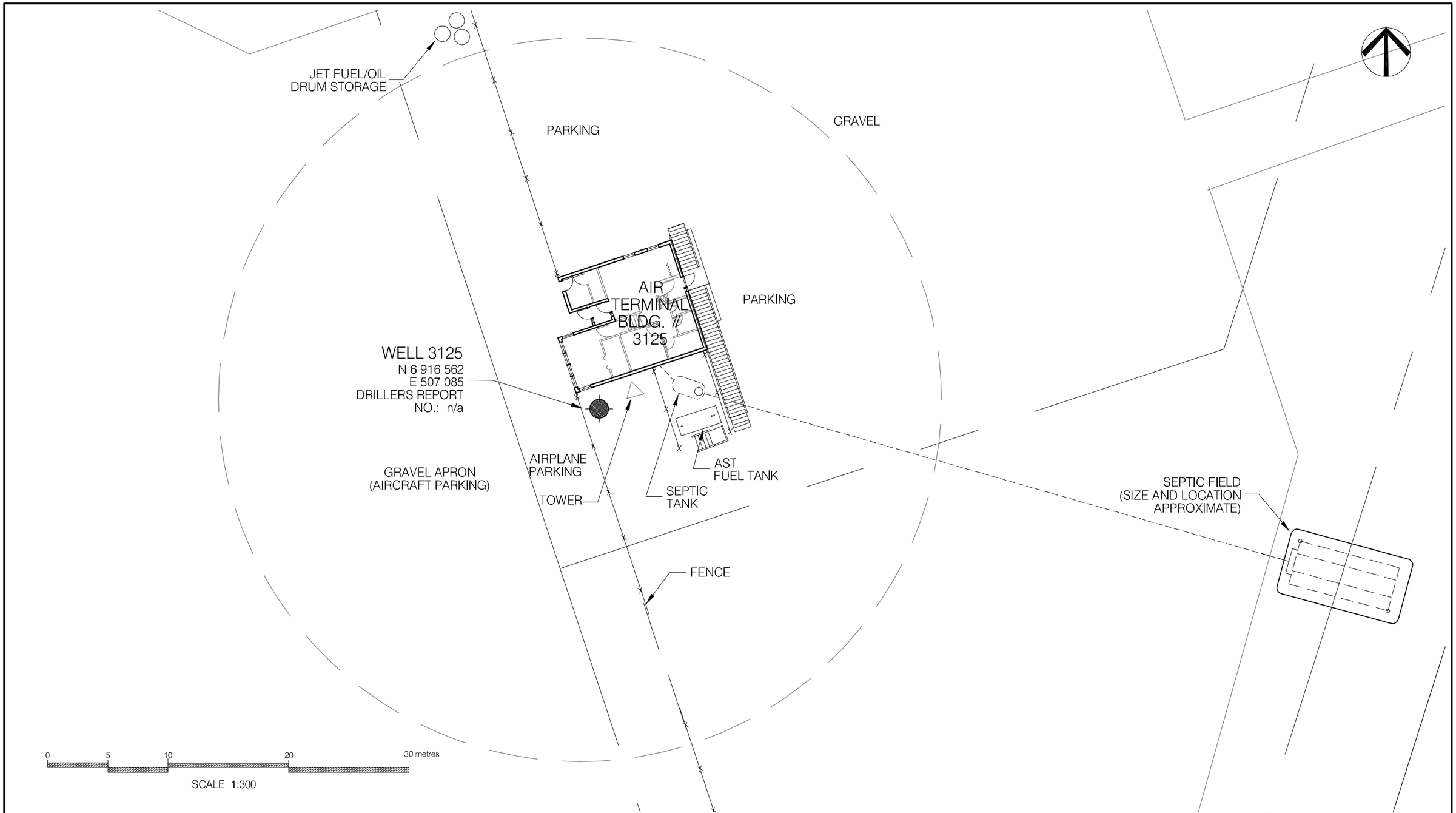
Option 1 estimated costs are provided below:

- The estimated cost for standard wellhead upgrades is approximately **$5,000;**
- The estimated cost to camera, redevelop and clean the well is **$3000**; and,
- A Class D estimate of the cost to relocate all potential contaminant sources within 30 m of well would be in the order of **$15,000**.

Option 2: Construct New Well to Serve Airport Facility

The estimated cost for the Option 1 which includes the construction of a new well to serve the Airport Terminal Building is approximately **$30,000** for drilling, testing and hook-up, assuming that the well would be approximately 30 m deep and constructed as described above.

The existing treatment system (Priority 1) would be utilized for water system disinfection for each of the options presented above.



NOTES:

1. UTM COORDINATES OBTAINED WITH A HAND HELD GPS USING NAD83 SYSTEM AND ARE CONSIDERED TO BE ACCURATE TO 10.0 m, APPROXIMATELY.

30 m RADIUS FROM WATER WELL FOR CONSIDERATION OF PROXIMITY TO POTENTIAL CONTAMINANT SOURCES.

BUILDING STRUCTURES RELATIVE TO PROPERTY LINES ARE APPROXIMATE ONLY.

No.	DESCRIPTION	DATE	APPROVED
0	ISSUED FOR CLIENT REVIEW	DD/MM/YY	XXX

REVISION

EBA Engineering Consultants Ltd.

DESIGNED BY:	R. MARTIN
DRAWN BY:	J. BUYCK
DATE:	AUG. 2005
SCALE:	AS SHOWN
PROJECT No.:	1260002.003
ACAD FILENAME:	003-WESTERN REGION

CLIENT:

Yukon
Highways and Public Works
Property Management Branch

SMALL PUBLIC WATER SYSTEMS ASSESSMENT
WESTERN REGION

GOVERNMENT OF YUKON
HIGHWAYS & PUBLIC WORKS

BEAVER CREEK AIR TERMINAL
BUILDING # 3125
SITE LOCATION DIAGRAM
WELL ID: 3125

REVISION ISSUE 0

FIGURE No. FIGURE 3125-A

Z:\0201Drawings\1260002 Water Assessment YTG\003 -Western Region\beaver\1260002-B Crk Air Termina_3125A Site Plan.dwg, 9/20/2005 10:44:35 PM, Adobe PDF

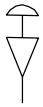
LEGEND


PUMP


PRESSURE GAUGE


GATE VALVE


CHECK VALVE

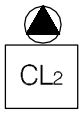

SOLENOID

#2 COMPONENT ID. No.
(SEE TABLE ON FOLLOWING PAGE)

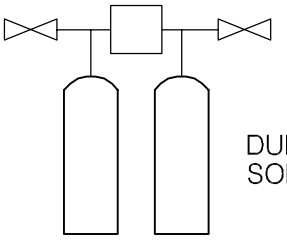
FLOW METER

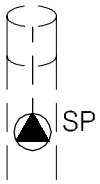
WATER FILTER
(CARTRIDGE TYPE)

PRESSURE TANK

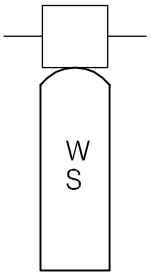


CHLORINE RESERVOIR AND
INJECTION PUMP


DUPLEX WATER
SOFTENER

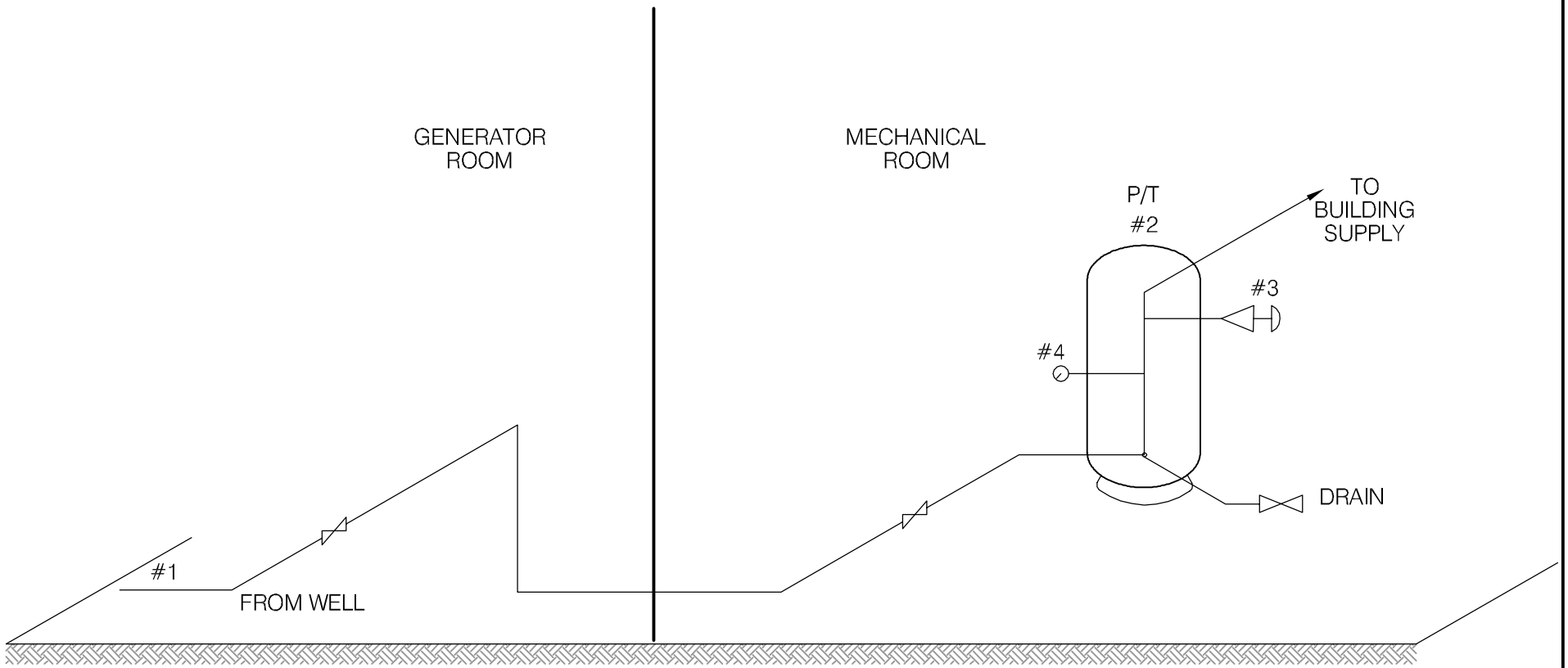


WELL WITH
SUBMERSIBLE PUMP



ACTIVATED
CARBON

EBA Engineering Consultants Ltd.			PROJECT	SMALL PUBLIC WATER SYSTEMS ASSESSMENT WESTERN REGION	
CLIENT Yukon Highways and Public Works Property Management Branch			TITLE	SCHEMATIC SYSTEM LEGEND	
DATE APRIL 2006	DWN. JSB	CHKD. RMM	FILE NO. 1260002		DRWG. LEGEND



SCHEMATIC PRODUCED BY BERT ALBISSER OF AQUA TECH SUPPLIES AND SERVICES LTD.

EBA Engineering Consultants Ltd.			PROJECT	SMALL PUBLIC WATER SYSTEMS ASSESSMENT WESTERN REGION	
CLIENT Yukon Highways and Public Works Property Management Branch			TITLE	WATER SYSTEM DISTRIBUTION/TREATMENT SCHEMATIC SYSTEM ID.: 3125 BEAVER CREEK AIR TERMINAL	
DATE SEPT. 2005	DWN. JSB	CHKD. RMM	FILE NO. 1260002.003		DWG.: FIGURE 3125-B

Z:\0201Drawings\1260002 Water Assessment YTG\003 -Western Region\beaver\1260002 B Crk Air Terminal_3125B Schematic.dwg, 4/4/2006 12:49:52 PM, Adobe PDF, jbuyck

Western Region – Beaver Creek Air Terminal Building
Building # 3125

DISTRIBUTION & TREATMENT SYSTEM DATA

Item	Description	Manufacturer	Model	Part No.	Serial No.	Size
1	Sub Pump.	Monarch	WK12A5EX		834	4" - 1/2 HP.
2	Pressure Tank	Challenger	PC 122			
3	Pressure Switch	Square D	FSG-2			2HP- 1/4" NPT
4	Pressure Gauge	Marsh	0-100 PSI			2" - 1/4" NPT
5						
6						
7						
8						
9						
10						

TABLE 3125- 1: SUMMARY OF BACTERIOLOGICAL RESULTS

Building #	Building Name	Number of Sampling Events	Time Period over which Sampling was Done	Any Positive Total Coliform Results? (yes or no)	Fraction of Positive Total Coliform Results vs. Total Sampling Events	Any positive E.Coli results? (yes or no)	Most Recent Sampling Event Available for EBA Review	Is Most Recent Result Positive?
3125	Beaver Creek Air Terminal Building	9	Sept-04 to Jun-05	**yes**	1/9	no	16-Jun-05	no

Table 3125-2: Water Quality Results

SOURCE:	Building 3125 - Beaver Creek Air Terminal Building			GCDWQ Criteria		
Location/ Resident	Beaver Creek					
Address						
Treatment	None					
Disinfection	None					
Source of Water	On-site well					
Purpose of Sampling	Base Line	Base Line	Additional Analytical			
Sample Location			Washroom tap			
Date Sampled	21-Sep-04	15-Jun-05	27-Jul-05	Lower	Upper Limit	
Physical Tests *(ALS)*				AO	MAC	AO
Colour (CU)	7	<5.0	-			15
Conductivity (uS/cm)		290	-			
Total Dissolved Solids	156	171	-			500
Hardness CaCO3	137	126	-	AO >200 = poor, > 500 unacceptable[A]		
pH	8.29	8.16	-	6.5		8.5
Turbidity (NTU)	4.1	3.29	11.7		1	5
UV Absorbance			0.0060			
% UV Transmittance			98.6			
Dissolved Anions *(ALS)*						
Alkalinity-Total CaCO3	120	118	-			
Chloride Cl	<0.5	0.62	-			250
Fluoride F	<0.05	0.059	-		1.5	
Silicate SiO4			-			
Sulphate SO4	28.9	32.6	-			500
Nitrate Nitrogen N	0.2	0.22	-		10	
Nitrite Nitrogen N	<0.05	<0.10	-		3.2	
Ammonia Nitrogen N			-			
Total Phosphate PO4			-			
Total Metals *(ALS)*						
Aluminum T-Al	<0.005	<0.010	-			
Antimony T-Sb	<0.0002	<0.00050	-		0.006	
Arsenic T-As	0.0006	0.00041	-		0.025	
Barium T-Ba	0.011	<0.020	-		1	
Boron T-B	0.026	<0.10	-		5	
Cadmium T-Cd	<0.00001	<0.00020	-		0.005	
Calcium T-Ca		39.3	-			
Chromium T-Cr	0.0005	<0.0020	-		0.05	
Copper T-Cu	0.059	0.102	-		1	
Iron T-Fe	0.27	0.209	-			0.3
Lead T-Pb	0.0014	0.0010	-		0.01	
Magnesium T-Mg		6.67	-			
Manganese T-Mn	0.014	0.0090	-			0.05
Mercury T-Hg		<0.00020	-		0.001	
Potassium T-K		1.08	-			
Selenium T-Se		<0.0010	-		0.01	
Sodium T-Na	3.0	2.5	-			200
Uranium T-U	<0.0005	0.00030	-		0.02	
Vanadium T-V			-			
Zinc T-Zn	1.47	1.02	-			5
Organic Parameters						
Tannin and Lignin			<0.10			
Total Organic Carbon C			0.90			
Extractable Hydrocarbons						
EPH10-19			<0.30			
EPH19-32			<1.0			
LEPH			-			
HEPH			-			
Field Chemistry (EBA)						
pH			8.31	6.5		8.5
TDS (ppm)			127			500
EC (uS/cm)			251			
Temperature (°C)			17.5			
Free Available Chlorine						

Notes:

A. Guidelines indicated for hardness are not CDWQG, rather they are general aesthetic guidelines - exceedences are indicated in yellow highlighting.

Italics and underline indicates exceedence of proposed MAC (ie. arsenic)

Bold with Yellow highlighting indicates exceedence of CDWQG Aesthetic Objective (AO)

Bold Underline with Yellow highlighting indicates exceedence of CDWQG MAC

Results are expressed as milligrams per litre except for pH and Colour (CU) Conductivity (umhos/cm),Temperature (°C) and Turbidity (NTU)

< = Less than the detection limit indicated.

AO = Aesthetic Objective

MAC = Maximum Acceptable Concentration (Health Based)

eba

SMALL PUBLIC WATER SYSTEM ASSESSMENT

PART A: EBA Site Inspection

Inspector: Ryan Martin Date July 27, 2005

WELL ID #	Owner	Location Description
3125	YTG	Beaver Creek Airport Terminal Building

1. Well Location and Potential Contaminant Sources

a. General location of well: (Community, Subdivision, etc.)
Beaver Creek

b. Specific location: (Road or street, Building number, name of owner and/, legal description,
Mile 1204 Alaska Highway

c. GPS location: N 6919562 E 507085 elv 654 m ± 5 m

d Is there electric power? ☒ Yes ☐ No

e Is there outside water access? ☒ Yes ☐ No
but is in locked enclosure on side of building

f. Does the well system have:

☐ 15 or more service connections to a piped distribution system ? If so how many_____
Airport Terminal Building

☐ 5 or more delivery sites on a trucked distribution system? If so how many_____

g. Nearest building, specify Airport terminal building

h. Distance from well to building ~2m

i. If there is an effluent disposal field, is its location known? ☒ Yes ☐ No

j. Distance from well to nearest point of known field: ~54m (5m to tank)

k. Well location relative to field: ☐ upslope ☐ downslope ☐ lateral

l. Is there any part of a sewage disposal system(s)or other potential sources of pollution that may pose a health and safety risk within 30 m? ☒ Yes ☐ No
Septic tank @ 5m and service lines ≤30m

m. Is the well located within 300 m from a sewage lagoon or pit? ☐ Yes ☒ No unlikely

n. Is the well located within 120 m from a solid waste site or dump, cemetery? ☐ Yes ☒ No unlikely

o. Is the infrastructure protecting the wellhead, pumphouse, storage tank and/or water treatment plant designed and secured to prevent:

Unauthorized access by humans? ☐ Yes ☒ No Entrance by animals? ☒ Yes ☐ No
unlocked enclosure

p. Is well site subject to flooding? ☐ Yes ☒ No

q. Is the well site well drained? ☐ Yes ☒ No ground around wellhead is flat. -no drainage

r. Is there a buried fuel tank on the property? ☐ Yes ☐ No

If yes, is it ☐ in use ☐ abandoned

Is the location known? ☐ Yes ☐ No
Distance from the well to known buried tank _____

s. Are there any other known contaminant sources on the property?

☐ Yes ☐ No Describe _____

If yes, specify the source: ☐ dump ☐ sewage lagoon ☐ cemetery ☐ other

Potential Source 1: AST ; Distance from well to Potential Source 1: 5m
Potential Source 2: oil drums ; Distance from well to Potential Source 2: 30m
Potential Source 3: vehicle parking ; Distance from well to Potential Source 3: 10m
Potential Source 4: aircraft parking; Distance from well to Potential Source 4: 5m
Avgas, jet fuel storage area within 30m

t. Are there other wells on this property? ☐ Yes ☒ No

How many?_____ ☐ in use ☐ abandoned ☐ require proper sealing

2. Well and Wellhead information:

a. When was well installed? Year unknown Month _____

b. Type: ☒ drilled ☐ dug ☐ sand point ☐ other _____

c. Is there a drillers log for the well: ☐ Yes ☒ No

d. Is there a surface seal to 6 m ☐ Yes ☒ No ☐ unknown ☒ unlikely

e. Surface casing: ☐ Yes Diameter _____ ☒ No

f. Well casing: Diameter 15 cm Material: ☒ steel ☐ plastic ☐ concrete

g. Depth of well: unknown ☐ measured (if possible) ☐ reported ☐ from log

h. Static water level below ground: unknown

☐ measured (if possible) ☐ reported ☐ from log ☐ flowing

i. (If granular) Is the well completed: ☐ open end casing ☐ with a well screen

☐ with slotted pipe ☐ unknown other unknown

j. (If bedrock) Does the well have a liner? ☐ yes ☐ No ☐ steel ☐ plastic

k. If there is a well screen: length unknown slot size(s) _____
Location of screen: from _____ to _____ from log reported

l. Is there a sump below the screen? ☐ Yes ☐ No unknown

m. Is the well head: ☐ in pumphouse ☒ in pit ☐ pitless adaptor ☐ in a building

concrete pit

☐ in a wooden enclosure other, describe _____

n. If the well head is located in a wooden enclosure,

i. Is the well head below grade? describe in detail ~1.15 m below grade

ii. Are there signs of ponding on the enclosure(e.g. water stains, etc.)? ☒ Yes ☐ No

iii. Is the wellhead enclosed by fiberglass insulations? ☒ Yes ☐ No

iv. Any evidence of rodents? Specify No

v. Does the well casing have a proper seal cap? ☒ Yes ☐ No

If no, describe condition Solid plate cap

3. Water Supplying This Well:

a. By definition is the water from a surface water source or under the direct influence of surface water?

☒ Yes ☐ No ☐ farther investigation required.

If yes is there treatment or disinfection ☐ Yes ☐ No

Explain (filtration, disinfection etc…)

---

4. Aquifer Supplying This Well:

a. The aquifer is: ☐ bedrock ☒ granular sediment ☐ unknown
likely

b. Does water level and/or well capacity show seasonal fluctuation? ☐ Yes ☒ No
unlikely

5. Pump Installation:

a. Is the well equipped with a pump? ☒ yes ☐ No

b. Type of pump: ☐ hand ☒ electric submersible ☐ jet

☐ shallow well centrifugal ☐ other,

c. Description: Manufacturer _____ Model _____

horsepower _____ capacity _____ voltage _____

d. Date installed: _____ By: _____

e. For submersible pump, depth of setting below surface _____

f. Drop pipe for submersible pump: ☐ steel ☒ plastic likely

g. Pump delivers water to: ☒ pressure tank ☐ elevated tank ☐ other

h. Are there automatic pump controls: ☒ Yes ☐ No

i. Is there provision for taking water samples before water reaches storage? ☐ Yes ☒ No

j. Is there a water meter on the system? ☐ Yes ☒ No

k. Is the pump and piping protected from freezing? ☒ Yes ☐ No

If yes, describe: Insulation and heat trace

l. Comments on pump installation: _____

6. Conclusions

a. Comments on overall installation:

b. Recommendations: _____

PART B: EBA Site Inspection

Inspector: BERT ALBISSER Date July 26/05

WELL ID #	Owner	Location Description
3125	YTG	BEAVER CREEK AIRPORT

6. **Water Treatment**

a. Is well water treated? ☐ Yes ☑ No; Type of treatment:

☐ chlorination ☐ iron and or manganese removal ☐ other _____

b. Is water entering plumbing or piped distribution system treated with chlorine or another treatment that is as effective as chlorine used to achieve disinfection throughout the system?

☐ Yes ☑ No If so how _____

c. If treated with chlorine, is the free residual chlorine concentration less than 0.2 mg/L

☐ Yes ☑ No _____ reading.

Tested at _____ (location)

d. Is testing for chlorine residual concentration done at the tap (eg. Kitchen faucet) or from representative points in a piped distribution system, including a point from tap at the end line

☐ Yes ☑ No If yes how often? _____

e. If the drinking water is being transported by water delivery truck does it have a minimum chlorine free residual of 0.4 mg/L at the time of fill. ☐ Yes ☑ No

7. **Water Quality (observations):**

a. Does the water stain plumbing? ☐ yes ☐ No ☑ slight ☐ severe

Type of stain: ☐ brown ☑ red ☐ black

b. Does the water contain sediment? ☐ Yes ☐ No ☑ occasional ☐ constant

c. Is there an unpleasant odour? ☐ Yes ☑ No ☐ H_2S ☐ Other _____

d. Is there an unpleasant taste? ☐ Yes ☑ No ☐ brackish ☐ Other _____

e. Is there a history of bad bacterial analyses? ☐ Yes ☐ No ?

f. Is there a chemical analysis? ☐ Yes ☐ No ☐ adequate ☐ incomplete

g. Is there analysis of trihalomethanes (THMs) where the water source is a surface water supply or a well under the direct influence of surface water? ☐ Yes ☑ No

h. Is the drinking water tested daily with an accurate reading chlorine test kit capable of reading in the range 0 to 3.5 mg/L of free chlorine residual in increments of 0.1mg/L? ☐ Yes ☐ No ☑ unknown

i. If yes is the test performed in accordance with manufactures directions? ☐ Yes ☑ No ☐ unknown

j. Is a record of the date, time,name of person performing the test and results of the drinking water sample kept? ☐ Yes ☑ No

TANK AND PIPING DETAILS

Tank Room

Is there a water tank? Yes No Details: PRESSURE TANK

Where is it located?
Comments: MECHANICAL ROOM

Is the room in which the water tank is located heated to maintain an optimum temperature of 4°C for stored water?
YES NO
Comments: _____

Are there windows in the add-on that may allow direct sunlight onto the water holding tank? YES NO

Comments: _____

Are there other heat sources near the tank? YES NO
Comments: _____

Is there waterproof flooring with a sealed base to contain spills? YES NO
Comments: _____

Overall Tank

What are the tank size and dimensions?

_____

What material is the tank constructed of? _____

Is tank and associated piping constructed of safe materials (i.e. CSA approved and material that does not affect the taste of the water)? YES NO

Comments: _____

Tank Inlet, Outlet and Lid

Is there adequate access on the tank for cleaning (i.e. min 15" access lid)? YES NO

Does the lid have a tight seal and is it watertight when closed? YES NO

Does the tank have an overflow or high level whistle? YES NO

Is the water tank drain accessible? YES NO

WATER TANK AND WATER QUALITY CONDITION

Are there signs of staining or biofouling? YES NO
Comments: _____

Is there any sediment or scum in bottom of tank? YES NO
Comments: _____

Is there any odour associated with the water or tank? YES NO

Have there been any bacteriological analyses conducted previously? YES NO

Does the tank appear that it has been cleaned recently? YES NO

Are the tanks easily assessed for the purpose of cleaning and disinfection? YES NO

8. Conclusions

a. Comments on overall installation:

INSIDE INSTALLATION IS OF GOOD QUALITY WORKMANSHIP & MATERIAL. THERE IS NO TREATMENT.

b. Recommendations:

INSTALL TREATMENT IF REQUIRED TO SUIT A UV STERILIZER (NSF55 CERTIFIED). INSTALL APPROPRIATE UV STERILIZER TO SUIT FLOW REQUIREMENTS.

Photo 0528: 3125 Beaver Creek Airport Terminal Building

Photo 0529: 3125 terminal building (rear), wellhead enclosure (left), above ground fuel storage tank (right)

Photo 0531: 3125 Wellhead in pit

Photo 0534: 3125 Parking lot, septic field (back right)

Photo 0532: 3125 Manhole to septic system

Photo 0081: 3125 Point of entry and pressure tank